Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for controlling congestion in a networking device having a plurality of input interface queues, said method comprising:

estimating, in each sampling state, a data arrival rate for each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and obtaining a set of estimated arrival rates for the plurality of the input interface queue;

determining, for each polling state associated with a respective sampling state, the sequence in which the plurality of input interface queues should be polled and the quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled, using the set of estimated data arrival rates of the plurality of input interface queues, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues; and

polling, in each polling state, the plurality of the input interface queues in accordance with the determined sequence and quantity.

2. (Previously Presented) The method according to claim 1, wherein the data arrival rate on each of the plurality of input interface queues is estimated based on the static link capacity of the input interface queue.

3. (Previously Presented) The method according to claim 1, wherein the data arrival rate on each of the plurality of input interface queues is estimated based on a dynamically updated measurement.

4. (Previously Presented) The method according to claim 1, wherein the data arrival rate on each of the plurality of input interface queue is estimated using an exponential averaging function based on a constant factor and on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

5. (Previously Presented) The method according to claim 1, wherein the data arrival rate on each of the plurality of input interface queues is estimated using an exponential averaging function based on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

6. (Original) The method according to claim 1, wherein said networking device is a router.

7. (Original) The method according to claim 2, wherein said networking device is a router.

8. (Original) The method according to claim 3, wherein said networking device is a router.

9. (Original) The method according to claim 4, wherein said networking device is a router.

10. (Original) The method according to claim 5, wherein said networking device is a router.

11. (Currently Amended) An apparatus for controlling congestion in a networking device having a plurality of input interface queues, said apparatus comprising:

means for estimating, in each sampling state, a data arrival rate for each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and obtaining a set of estimated arrival rates for the plurality of the input interface queue;

means for determining, for each polling state associated with a respective sampling state, the sequence in which the plurality of input interface queues should be polled and the quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled, using the set of estimated data arrival rates of the plurality of input interface queues, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues; and

means for polling, in each polling state, the plurality of the input interface queues in accordance with the determined sequence and quantity.

12. (Previously Presented) The apparatus according to claim 11, wherein the data arrival rate on each of the plurality of input interface queues is estimated based on the static link capacity of each input interface queue.

13. (Previously Presented) The apparatus according to claim 11, wherein said data arrival rate on each of the plurality of input interface queues is estimated based on a dynamically updated measurement.

14. (Previously Presented) The apparatus according to claim 11, wherein said data arrival rate on each of the plurality of input interface queues is estimated using an exponential averaging function based on a constant factor and on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

15. (Previously Presented) The apparatus according to claim 11, wherein said data arrival rate on each of the plurality of input interface queues is estimated using an exponential averaging function based on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

16. (Original) The apparatus according to claim 11, wherein said networking device is a router.

17. (Original) The apparatus according to claim 12, wherein said networking device is a router.

18. (Original) The apparatus according to claim 13, wherein said networking device is a router.

19. (Original) The apparatus according to claim 14, wherein said networking device is a router.

20. (Original) The apparatus according to claim 15, wherein said networking device is a router.

21. (Currently Amended) An apparatus for controlling congestion in a networking device having a plurality of input interface queues, comprising:

an arrival rate estimator adapted to estimate, in each sampling state, a data arrival rate for each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and to obtain a set of estimated arrival rates for the plurality of the input interface queue; and

scheduling logic coupled to an output of said arrival rate estimator, said scheduling logic being adapted to determine, for each polling state associated with a respective sampling state, the sequence in which the input interface queues should be polled and the quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled based on the set of estimated arrival rates, and adapted to poll, in each polling state, the plurality of the input interface queues in accordance with the determined sequence and quantity, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues.

22. (Previously Presented) The apparatus according to claim 21, wherein the data arrival rate on each of the plurality of input interface queues is estimated based on the static link capacity of the input interface queue.

23. (Previously Presented) The apparatus according to claim 21, wherein said data arrival rate on each of the plurality of input interface queues is estimated based on a dynamically updated measurement.

24. (Previously Presented) The apparatus according to claim 21, wherein said data arrival rate on each of the plurality of input interface queues is estimated using an exponential averaging function based on a constant factor and on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

25. (Previously Presented) The apparatus according to claim 21, wherein said data arrival rate on each of the plurality of input interface queues is estimated using an exponential averaging function based on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

26. (Original) The apparatus according to claim 21, wherein said networking device is a router.

27. (Original) The apparatus according to claim 22, wherein said networking device is a router.

28. (Original) The apparatus according to claim 23, wherein said networking device is a router.

29. (Original) The apparatus according to claim 24, wherein said networking device is a router.

30. (Original) The apparatus according to claim 25, wherein said networking device is a router.

31. (Currently Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for controlling congestion in an networking device having a plurality of input interface queues, the method comprising:

estimating, in each sampling state, a data arrival rate for each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and obtaining a set of estimated arrival rates for the plurality of the input interface queue;

determining, for each polling state associated with a respective sampling state, the sequence in which the plurality of input interface queues should be polled and the quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled, using the set of estimated data arrival rates of the plurality of input interface queues, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues; and

polling, in each polling state, the plurality of the input interface queues in accordance with the determined sequence and quantity.

32. (Previously Presented) The method according to claim 1, wherein said estimating the data arrival rate is performed sequentially with respect to said determining the sequence and the quantity.

33. (Previously Presented) The method according to claim 1, wherein said estimating the data arrival rate is performed independently with respect to said determining the sequence and the quantity.

34. (Previously Presented) The apparatus according to claim 11, wherein said means for estimating the data arrival rate operates sequentially with respect to said means for determining the sequence and the quantity.

35. (Previously Presented) The apparatus according to claim 11, wherein said means for estimating the data arrival rate operates independently with respect to said means for determining the sequence and the quantity.

36. (Previously Presented) The apparatus according to claim 21, wherein said arrival rate estimator operates sequentially with respect to said scheduling logic.

37. (Previously Presented) The apparatus according to claim 21, wherein said arrival rate estimator operates independently with respect to said scheduling logic.

38. (Previously Presented) The method according to claim 1, wherein the rate at which data are processed from each input interface queue is proportional to the data arrival rate on each input interface queue.

39. (Previously Presented) The method according to claim 32, wherein the rate at which data are processed from each input interface queue is proportional to the data arrival rate on each input interface queue.

40. (Previously Presented) The method according to claim 33, wherein the rate at which data are processed from each input interface queue is proportional to the data arrival rate on each input interface queue.

41. (Previously Presented) The apparatus according to claim 11, wherein the rate at which data are processed from each of the plurality of input interface queues is proportional to the data arrival rate on the input interface queue.

42. (Previously Presented) The apparatus according to claim 34, wherein the rate at which data are processed from each of the plurality of input interface queues is proportional to the data arrival rate on the input interface queue.

43. (Previously Presented) The apparatus according to claim 35, wherein the rate at which data are processed from each of the plurality of input interface queues is proportional to the data arrival rate on the input interface queue.

44. (Previously Presented) The apparatus according to claim 21, wherein the rate at which data are processed from each of the plurality of input interface queues is proportional to the data arrival rate on the input interface queue.

45. (Previously Presented) The apparatus according to claim 36, wherein the rate at which data are processed from each of the plurality of input interface queues is proportional to the data arrival rate on the input interface queue.

46. (Previously Presented) The apparatus according to claim 37, wherein the rate at which data are processed from each of the plurality of input interface queues is proportional to the data arrival rate on the input interface.

47. (Previously Presented) The program storage device according to claim 31, wherein the data arrival rate on each of the plurality of input interface queues is estimated based on the static link capacity of the input interface queue.

48. (Previously Presented) The program storage device according to claim 31, wherein the data arrival rate on each of the plurality of input interface queues is estimated based on a dynamically updated measurement.

49. (Previously Presented) The program storage device according to claim 31, wherein the data arrival rate on each of the plurality of input interface queue is estimated using an exponential averaging function based on a constant factor and on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

50. (Previously Presented) The program storage device according to claim 31, wherein the data arrival rate on each of the plurality of input interface queues is estimated using an exponential averaging function based on the difference in arrival times between a current data packet and a previous data packet into the input interface queue.

51. (Previously Presented) The program storage device according to claim 31, wherein said networking device is a router.

52. (Previously Presented) The program storage device according to claim 31, wherein said estimating the data arrival rate is performed sequentially with respect to said determining the sequence and the quantity.

53. (Previously Presented) The program storage device according to claim 31, wherein said estimating the data arrival rate is performed independently with respect to said determining the sequence and the quantity.

54. (Previously Presented) The program storage device according to claim 31, wherein the rate at which data are processed from each input interface queue is proportional to the data arrival rate on each input interface queue.

55. (Previously Presented) The method according to claim 1, wherein each sampling state has a first selected time interval, and each polling state has a second selected time interval.

56. (Previously Presented) The apparatus according to claim 11, wherein each sampling state has a first selected time interval, and each polling state has a second selected time interval.

57. (Previously Presented) The apparatus according to claim 21, wherein each sampling state has a first selected time interval, and each polling state has a second selected time interval.

58. (Previously Presented) The program storage device according to claim 31, wherein each sampling state has a first selected time interval, and each polling state has a second selected time interval.

59. (Currently Amended) A method for controlling congestion in a networking device having a plurality of input interface queues, said method comprising:

estimating a data arrival rate for each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and obtaining a set of estimated arrival rates for the plurality of the input interface queue;

determining a sequence in which the plurality of input interface queues should be polled and a quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled, using the set of estimated data arrival rates of the plurality of input interface queues, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues;

polling the plurality of the input interface queues in accordance with the sequence and the quantity determined in said determining; and

updating the sequence and the quantity used in said polling by repeating said estimating, said determining, and said polling with a desired cycle.

60. (Previously Presented) The method according to claim 59, wherein said estimating a current data arrival rate uses a previous data arrival rate estimated in a previous sampling state.

61. (Previously Presented) The method according to claim 59, wherein said sampling is performed during a first selected time interval, and said determining and said polling are performed during a second selected time interval.

62. (Currently Amended) An apparatus for controlling congestion in a networking device having a plurality of input interface queues, said apparatus comprising:

means for estimating a data arrival rate for each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and obtaining a set of estimated arrival rates for the plurality of the input interface queue;

means for determining a sequence in which the plurality of input interface queues should be polled and a quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled, using the set of estimated data arrival rates of the plurality of input interface queues, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues;

means for polling the plurality of the input interface queues in accordance with the sequence and the quantity determined in said determining; and

means for updating the sequence and the quantity used in said polling by repeating said estimating, said determining, and said polling with a desired cycle.

63. (Previously Presented) The apparatus according to claim 62, wherein said means for estimating uses a previous data arrival rate estimated in a previous sampling state to estimate a current data arrival rate.

64. (Previously Presented) The apparatus according to claim 62, wherein said means for sampling operates during a first selected time interval, and said means for determining and said means for polling operate during a second selected time interval.

65. (Currently Amended) A apparatus for controlling congestion in a networking device having a plurality of input interface queues, said apparatus comprising:

an arrival rate estimator adapted to estimate, in a sampling state, a data arrival rate for each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and to obtain a set of estimated arrival rates for the plurality of the input interface queue; and

scheduling logic coupled to said arrival rate estimator, said scheduling logic adapted to determine a sequence in which the plurality of input interface queues should be polled and a quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled, using the estimated the set of data arrival rates of the plurality of input interface queues, and adapted to poll the plurality of the input interface queues in accordance with the determined sequence and the determined quantity, said scheduling logic updating the sequence and the quantity for each polling sate using an updated arrival rate estimated in a previous sampling state, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues.

66. (Previously Presented) The apparatus according to claim 65, wherein said arrival rate estimator uses a previous data arrival rate estimated in a previous sampling state to estimate a current arrival rate.

67. (Previously Presented) The apparatus according to claim 65, wherein said arrival rate estimator operates during a first selected time interval, and said scheduling logic operates during a second selected time interval.

68. (Currently Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for controlling congestion in an networking device having a plurality of input interface queues, the method comprising:

estimating a data arrival rate on each of the plurality of input interface queues with respect to incoming data packets received on corresponding input interfaces, and obtaining a set of estimated arrival rates for the plurality of the input interface queue;

determining a sequence in which the plurality of input interface queues should be polled and a quantity of data to be processed from each of the plurality of input interface queues each time the input interface queue is polled, using the estimated data arrival rate on each of the plurality of input interface queues, wherein said sequence indicates an order in which each of said input interface queues should be polled during a single polling cycle, wherein the order includes an indication of where each of the input interface queues should be polled in relation to every other of the input interface queues;

polling the plurality of the input interface queues in accordance with the sequence and the quantity determined in said determining; and

updating the sequence and the quantity used in said polling by repeating said estimating, said determining, and said polling with a desired cycle.

69. (Previously Presented) The method according to claim 1, wherein said determining includes:

recalculating the sequence for each polling state based on the set of estimated data arrival rates.

70. (Previously Presented) The method according to claim 1, wherein said estimating includes:

polling each of the plurality of input interface queues in a predetermined sequence;

obtaining a sum of lengths of new incoming data packets which have arrived on each input interface queue since the last time the input interface queue was polled; and

calculating the estimated data arrival rate for each input interface queue based on the sum and time that elapsed since the last time the input interface queue was polled.

71. (Previously Presented) The apparatus according to claim 11, wherein said means for determining includes:

means for recalculating the sequence for each polling state based on the set of estimated data arrival rates.

72. (Previously Presented) The apparatus according to claim 11, wherein said means for estimating includes:

means for polling each of the plurality of input interface queues in a predetermined sequence;

means for obtaining a sum of lengths of new incoming data packets which have arrived on each input interface queue since the last time the input interface queue was polled; and

means for calculating the estimated data arrival rate for each input interface queue based on the sum and time that elapsed since the last time the input interface queue was polled.

73. (Previously Presented) The method according to claim 59, wherein said estimating includes:

polling each of the plurality of input interface queues in a predetermined sequence;

obtaining a sum of lengths of new incoming data packets which have arrived on each input interface queue since the last time the input interface queue was polled; and

calculating the estimated data arrival rate for each input interface queue based on the sum and time that elapsed since the last time the input interface queue was polled.

74. (Previously Presented) The apparatus according to claim 62, wherein said means for estimating includes:

means for polling each of the plurality of input interface queues in a predetermined sequence;

means for obtaining a sum of lengths of new incoming data packets which have arrived on each input interface queue since the last time the input interface queue was polled; and

means for calculating the estimated data arrival rate for each input interface queue based on the sum and time that elapsed since the last time the input interface queue was polled.

75. (Previously Presented) The program storage device according to claim 65, wherein said estimating includes:

polling each of the plurality of input interface queues in a predetermined sequence;

obtaining a sum of lengths of new incoming data packets which have arrived on each input interface queue since the last time the input interface queue was polled; and

calculating the estimated data arrival rate for each input interface queue based on the sum and time that elapsed since the last time the input interface queue was polled.